

**Research Progress Report to VDACS
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Project Title: **Evaluating Protected Culture for Season Extension in Strawberries**

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Project Description:

Strawberries in many parts of Virginia are produced in a fall planted annual system using raised beds covered with black plastic mulch (plasticulture). Advantages include cleaner and easier to harvest fruit, extended harvest season (4-6 weeks) and increased yields as compared to the matted row production system (20,000 +lbs/acre vs.10,000lbs/acre, respectively). Marketing and environmental constraints currently limit expansion. The majority of fruit is sold directly to consumers via pick-your-own locations or retail sales at farmer stands and local markets. Production therefore is focused in populated areas such as Virginia Beach and the remaining state's acreage is dispersed in small acreage farms. In addition to local/ regional demographic limitations, national suppliers of strawberries flood wholesale and larger retail markets during the Virginia field season. This supply of fruit presents very little competition in regards to quality, however, convenience and price are the challenging components. Rather than compete directly with the Driscoll's of the world, it is to the advantage of the Virginia strawberry grower to capitalize on the market he/she already has and improve upon the **seasonal availability** and **quality** of fresh strawberries for supplying their local/regional customer base.

Protected culture of fruit crops offers advantages such as increased control of environmental parameters, increased growing season, increased marketable yields and fruit quality. Cost per acre for constructing high tunnels can be high and therefore high-value crops are typically planted in this system such as strawberries. Conventional field plasticulture also has high costs of production and in the presence of adverse growing conditions such as excessive temperatures, rain, hail, and wind during harvest which can lead to complete crop loss under extreme situations. Protected culture will not safeguard against all environmental catastrophes but consistency and quality of production is likely to be increased significantly over field production trends.

Objectives:

To define optimal cultural conditions for fall/early winter and early spring strawberry production in protected culture

Progress:

Research plans will include a repeat of the 2006-07 trials in Blackstone and Winchester, Virginia which included (Fig 1.):

1. Conventional plasticulture (outdoors)
 - a. Five standard cultivars x 3 planting dates
2. Conventional plasticulture inside high tunnel
 - a. Two standard cultivars + a day neutral or everbearing cultivar x 3 planting dates
3. Soil-less culture inside tunnel
 - a. Two standard cultivars + a day neutral or everbearing cultivar x 3 planting dates

New trials for 2007-08 at Blackstone, Virginia

1. Outdoor fall production
 - a. New day neutral cultivar 'Albion'
2. Tunnel fall production
 - a. New day neutral cultivar 'Albion'
 - b. Soil-less culture

Plant material has been secured through commercial nurseries and field space is currently being prepared for an anticipated start of planting in late August and continuing through early October.



Figure 1. Conventional outdoor trial, left; conventional plasticulture in tunnel, center; soil-less culture in tunnel, right.